



# UNITED STATES PATENT AND TRADEMARK OFFICE

*clw*

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,403	10/01/2003	Kun Feng Lee	0941-0845P	5155

2292 7590 09/22/2006

BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER

YANG, NELSON C

ART UNIT PAPER NUMBER

1641

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/674,403	LEE ET AL.	
	Examiner	Art Unit	
	Nelson Yang	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 14-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of claims 1-13 in the reply filed on June 6, 2006 is acknowledged. The traversal is on the ground(s) that there would be no undue burden to search the unelected groups. This is not found persuasive because the unelected groups comprise limitations not found in claims 1-13, which would require further consideration and search in order to properly examine. This would result in a serious burden on the Office.
2. The requirement is still deemed proper and is therefore made FINAL.
3. Claims 14-27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on June 6, 2006.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-9, 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrews [US 5,225,163] in view of Burdon et al. [US 6,572,830].

With respect to claim 1, Andrews teaches the invention substantially as claimed because Andrews teaches two chambers with inlets in the two chambers (see figure 3). Andrews further teach reagents (analyzing elements) (column 7, lines 30-35), magnets for magnetic capture (analyzing elements) (column 7, lines 5-10), and viewing chambers for visual inspection (column 31-35), which would assist in the analysis and detection of analytes in the sample. However, Andrews does not teach that the two chambers are formed by three units as claimed by Applicants.

However Burdon et al. disclose that chambers can be formed by a plurality of green-sheet layers sintered together (column 3, lines 34-42) and further teach that this allows for a wide variety of properties and functionalities useful for chemical and biological applications, and that the device may be provided with different properties in different locations, such as thermal conductivity and optical transmission (column 3, lines 43-51). Burdon et al. further teach that this allows for sensors such as capacitive sensors to become an integral part of the device, with conductive leads lead to the exterior of the device (column 17, line 60 – column 8, line 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the Andrews chambers using different units sealed together to form a chamber as taught by Burdon et al. because Burdon et al. teach that a chamber can be formed by different layers that are sealed together. Providing three units such that two chambers are formed (as claimed by Applicants) would have been obvious given the general teachings of Burdon et al. that any chamber can be formed by integrating components such that a chamber is formed and then sealing the components, and one of ordinary skill in the art would have been motivated to do so, in order to provide different properties to the device in different locations.

Art Unit: 1641

6. With respect to claim 2, Andrews teaches an angled channel segment (36) which delivers reaction fluids into another chamber (38), (col. 7, lines 1-5). Andrews teaches that this angled channel segment (36) provides an isolated area in which to place a magnet for magnetic capture of reaction products (col. 7, lines 5-7, and see figure 3). (Andrews also discloses another embodiment (see figure 7) in which an angled channel is disclosed in general.) The angled channel segment (36) is deemed to be Applicants' claimed pipeline. It is noted that with the modification of the Andrews invention as taught by Burdon et al. as discussed above, the modification results in the angled channel segment (36) being in the second unit and because the angled channel segment (36) is connected to both chambers (33) and (38), the angled channel segment (36) is sequentially connected to the fluid inlet, first lower portion, second upper portion and fluid outlet with an inclined angle, as claimed by Applicant.

7. With respect to claims 3 and 4, Burdon et al. teach that the layers are sintered together (sealing element) (column 3, lines 34-36).

8. With respect to claims 5, 6, Burdon et al. teach capacitive sensors to become an integral part of the device, with conductive leads lead to the exterior of the device (column 17, line 60 – column 8, line 5).

9. With respect to claim 7, Andrews teaches the use of reagents (column 7, lines 30-35) which would be biological or chemical sensing elements for antigen-antibody specific binding assays (column 7, lines 13-15).

10. With respect to claim 9, Andrews teaches the use of reagents (column 7, lines 30-35) which would be biological or chemical sensing elements for antigen-antibody specific binding assays (column 7, lines 13-15).

Art Unit: 1641

11. With respect to claims 8, 13 Andrews teaches viewing chambers, which are optical sensing elements, for visual inspection (column 31-35) of the reaction products, from the reagents in the first chamber, while Budon et al. teach the use of capacitive sensors (electrodes) (column 17, lines 60-67).

12. With respect to claim 11, Burdon et al. teach that the green-sheet layers may comprise glass particles (column 3, lines 1-5).

13. With respect to claim 12, Burdon et al. teach an electroosmotic pumping system (column 6, lines 5-10).

14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andrews [US 5,225,163] in view of Burdon et al. [US 6,572,830], and further in view of Moles [US 6,293,012].

With respect to claim 10, Andrews and Burdon et al. disclose the invention as substantially claimed, as discussed above. Andrews and Burdon et al. fail to disclose a bolt to combine the first, second, and third units.

Moles, however, teaches that materials held between two stiff metal platens connected by a plurality of bolts, preventing the platens from moving apart from one another, and allow bonding of layers together (column 10, lines 5-20).

Therefore, it would have been obvious to one of ordinary skill in the art to have place the sintered layers of Burdon et al. between to still metal platens connected by bolts in order to prevent the layers from moving apart, and to allow the bonding of the different layers together.

### *Conclusion*

Art Unit: 1641

15. No claims are allowed.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Yang whose telephone number is (571) 272-0826. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

17. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nelson Yang  
Patent Examiner  
Art Unit 1641

  
LONG V. LE 09/15/08  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600